FEB 11 1991 594C-32 FEM 1.209: 360738/1987

FLOOD INSURANCE STUDY

COMPLETED 48

ORIGINAL

TOWN OF GLENVILLE, NEW YORK
SCHENECTADY COUNTY

MAY 4, 1987

Federal Emergency Management Agency

COMMUNITY NUMBER - 360738

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NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

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FLOOD INSURANCE STUDY
TOWN OF GLENVILLE, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Town of Glenville, Schenectady County, New York, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in their efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgements

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study represent a revision of the original analyses prepared by the New York State Department of Environmental Conservation (NYSDEC) and Dewberry & Davis for the Federal Emergency Management Agency (FEMA), under Contract No. H-4547. The work for the original study was completed in February 1983.

In this updated study, portions of the hydraulic analysis for Alplaus Kill were prepared by the New York State Department of Transportation (NYSDOT) and Dewberry and Davis. This work was completed in May 1986.

1.3 Coordination

On May 25, 1977, an initial Consultation and Coordination Officer's (CCO) meeting, attended by representatives of FEMA, the Town of Glenville, and NYSDEC (the original study contractor), was held to identify the streams to be studied by detailed methods. A search for data pertinent to the study was made at all levels of government.

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On July 6, 1983, a final CCO meeting was held with representatives of the FEMA, the Town of Glenville, and Dewberry & Davis to review the results of the study.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Town of Glenville, Schenectady County, New York. The Village of Scotia was not included in this study. The area of study is shown on the Vicinity Map (Figure 1).

The Mohawk River, Alplaus Kill, and Kromme Kill were studied by detailed methods for their entire lengths within the Town of Glenville. Alplaus Kill was revised in this study from approximately 140 feet downstream of the Boston and Maine Railroad to approximately 2,720 feet upstream of the Delaware and Hudson Railroad to reflect new hydraulic analyses showing updated topography and structural information. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

Collins Creek, an area northwest of the CONRAIL tracks, and several unnamed tributaries to Alplaus Kill were studied by approximate methods. Portions of Collins Creek are inundated by flooding from the Mohawk River; therefore, detailed flood boundaries representing flooding from the Mohawk River are presented in these areas. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and the Town of Glenville.

2.2 Community Description

The Town of Glenville is located in southern Schenectady County in eastern New York. The town is bordered by the City of Schenectady and the Town of Rotterdam to the south across the Mohawk River, the Town of Clifton Park to the east, the Town of Ballston to the northeast, the Town of Charlton to the north, the Town of Niskayuna to the southeast, and the Town of Amsterdam to the west. According to census figures for 1980, the population of the Town of Glenville was 28,519, a 1.5 percent decrease from the 1970 population of 28,969 (Reference 1).

The Mohawk River is the principal drainage feature in the community and the surrounding area. The river flows east from its source at Delta Reservoir to its confluence with the Hudson River. The Mohawk River forms the southern corporate limits of the Town of Glenville. Development within the Mohawk River valley is primarily agricultural.

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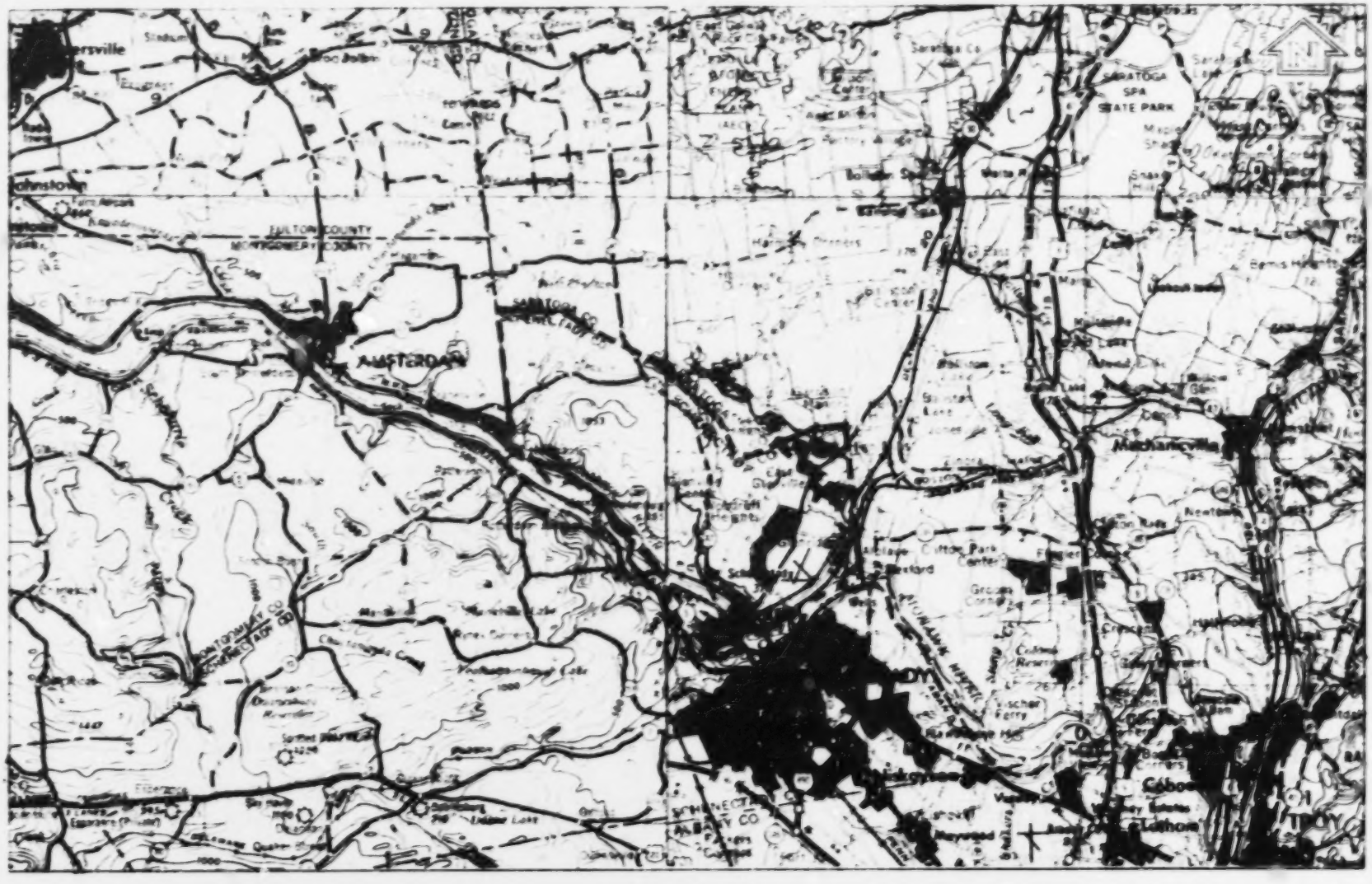

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

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Alplaus Kill flows into Glenville at its northern corporate limits and flows south along the eastern corporate limits of the town to its confluence with the Mohawk River.

Kromme Kill is located in the south-central portion of Glenville and flows south through the Village of Scotia and then southeast through Glenville to its confluence with the Mohawk River.

The soils in the northwestern section of Glenville are primarily of the Tuller-Brockport-Hornell association. These are nearly level, moderately deep soils of medium texture that are poorly drained. Soils of the Tuller-Brockport-Hornell association are formed in upland areas in thin glacial till deposits over bedrock. The soils in the southeastern portion of Glenville are mostly of the Plainfield association. The Plainfield association is characterized by nearly level, deep, moderately to excessively well drained soils. These soils were formed on lake plains and in valleys, in sandy deltic and glacio-lacustrine sediments (Reference 2). The elevations in Glenville range from 220 feet along the Mohawk River in the southeastern portion of the town to 1,110 feet just west of Waters Road (Reference 3).

The climate of the area is humid continental. Average daily temperatures range from 21.5 degrees Fahrenheit (°F) in January to 72°F in July. The average annual precipitation is 36 inches of which 14 inches becomes runoff (Reference 4).

2.3 Principal Flood Problems

The principal flooding source in the Town of Glenville is the Mohawk River. The maximum recorded discharge on the Mohawk River was 143,000 cubic feet per second (cfs) occurring on March 6, 1964 at stream gage No. 01357500 on the Mohawk River. This gaging station is located approximately 13 miles downstream of Glenville in the City of Cohoes and has 59 years of continuous record (Reference 5). This discharge resulted from a release of water impounded behind ice jams between the Cities of Schenectady and Cohoes.

2.4 Flood Protection Measures

Currently, no flood protection measures have been undertaken in the Town of Glenville. There are several dams in the Mohawk River drainage basin; however, none are operated for flood control. Delta Reservoir, located near Rome, is used only for canal operation. Rinkley Reservoir is used for canal operation and as a water supply for the City of Utica. Water from the Schoharie Reservoir is diverted out of the drainage basin to New York City for water supply. The Blenheim-Gilboa Pumped Storage Project on Schoharie Creek is used for power generation. In addition, the Mohawk River has a system of low-lying gates that are used to create pools for navigation; these gates are removed for part of the year.

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3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10) and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the community.

For the Mohawk River, flood flows are based on the results of Flood Insurance Studies for the Towns of Niskayuna, Colonie, and Waterford, and the City of Cohoes (References 6, 7, 8 and 9). The 10-, 50-, and 100-year discharges for these studies were determined using a log-Pearson Type III analysis of data from U. S. Geological Survey (USGS) stream gage No. 01357500 at Cohoes, New York. The 500-year discharges were determined by graphic extrapolation. Using the USGS discharges as a base, it was agreed upon with FEMA to develop transfer coefficients that would correspond with those used by the U. S. Army Corps of Engineers (COE) to develop discharges for the Mohawk River at Little Falls, New York (Reference 10). The transfer coefficients yielded flows for the Mohawk River above the confluence of Alplaus Kill, near the corporate limits of the City of Schenectady.

Discharges for Alplaus Kill were developed initially by the NYSDEC using USGS Water Supply Paper 1672 (Reference 11). Since this publication does not account for flooding events occurring during the past 20 years, the discharges were also recomputed using the method outlined in Water

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Resources Investigations (WRI) 79-83 (Reference 12). Ninety-five and five percent confidence limits were determined for the discharges computed using the WRI 79-83 method. This method of calculating discharges utilizes a log-Pearson Type III analysis to construct discharge-frequency curves for unregulated rural streams in New York. The discharge-frequency data and various basin characteristics are then used to develop multiple linear regression equations for floods of the selected recurrence intervals. The results of both analyses were then compared and, since the discharges computed using the method in Water Supply Paper 1672 fell within the confidence limits of the WRI 79-83 analysis, they were found to be acceptable.

Discharges for Kromme Kill were initially determined by the NYSDEC using the methods presented in USGS Circular 454 (Reference 13). Circular 454 utilizes a flood-frequency curve to determine discharges. This curve expresses the relationship between the mean annual flood, floods of specified recurrence intervals, and the drainage area of the stream being studied. The flood-frequency curve can be applied to any stream in New York. Since Circular 454 does not account for flooding events occurring during the past 20 years, the discharges for Kromme Kill were recomputed using WRI 79-83, which is a more recent USGS publication (Reference 12). The significant basin characteristics for the Kromme Kill watershed are slope, area, and storage. Ninety-five and five percent confidence limits were determined for the discharges computed with WRI 79-83 and the results of both analyses were compared. Since the discharges computed using Circular 454 did not fall within the confidence limits of those determined using WRI 79-83, the discharges computed using WRI 79-83 were used for this study.

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
MOHAWK RIVER					
Upstream of confluence of Alplaus Kill	3,306.0	82,700	131,300	149,600	186,200
ALPLAUS KILL					
At confluence with Mohawk River	56.3	3,410	4,840	5,500	6,900

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TABLE 1 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
ALPLAUS KILL - continued					
Upstream of Delaware and Hudson Railroad bridge	46.0	2,945	4,180	4,750	6,000
Approximately 1,000 feet upstream of Van Vorst Road bridge	39.9	2,635	3,740	4,250	5,450
KROMME KILL					
At confluence with Mohawk River	9.1	734	1,121	1,299	1,700
Approximately 1,000 feet downstream of CONRAIL	6.5	611	952	1,112	1,450

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross-section information for the backwater analysis of the streams studied by detailed methods were obtained by field survey. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. The baseline used for horizontal control was also obtained by field survey. Cross sections were located at close intervals above and below bridges, at natural control sections along the stream length, and at significant changes in ground relief and land use or land cover. The cross sections were plotted on USGS topographic maps at a scale of 1:24,000 with a contour interval of 10 feet (Reference 3).

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2). Along certain portions of the Mohawk River, a profile base line is shown on the maps to represent channel distances as indicated on the flood profiles and floodway data tables.

Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program

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(Reference 14). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrance intervals.

Starting water-surface elevations for the Mohawk River were taken from the Flood Insurance Study for the Town of Niskayuna at the State Route 146 bridge (Reference 6). Starting water-surface elevations for Alplaus Kill and Kromme Kill were determined using the slope/area method.

The HEC-2 hydraulic model was verified for the Mohawk River by running two historical flood flows. The March 14, 1977 flood was used because it was a relatively recent flood with accurate, observed water-surface elevations at the Western Gateway Bridge. For this storm, verification of the model was within 0.01 foot of the actual, observed water-surface elevation at the Western Gateway Bridge. Upstream of this point, the March 14, 1977 flood was not used because it occurred during the winter, when the Department of Transportation (DOT) dams at the navigation locks are not in place. At that time, the dams would not produce the most critical flooding conditions.

For verification of the hydraulic model upstream of the Western Gateway Bridge, the October 17, 1955 flood was used. This flood was used because it is the most recent, large flood that occurred during the navigation season (with the lock dams in place) that had recorded water-surface elevations at the locks.

When the dams are in place for the navigation season, further operational flexibility is allowed by the top portion of the dam which is made up of a row of gates that can be lifted to allow high water to pass. This is the normal high-water operation of the lock dams by the DOT and is the condition that was assumed for the hydraulic model calculations. According to the DOT, it is not a practical alternative to remove the dams entirely during high water. Entire dam removal is only done during the non-navigation season. The locks are closed at all times except when being used to pass boats. They are not designed to be opened to pass flood flows and thus, for the hydraulic model calculations, the locks were assumed to be closed.

When the hydraulic model was run through Lock 8 (Schenectady) for the October 17, 1955 flood, the resulting elevations were within 0.20 foot of the elevation recorded by the DOT above the lock.

Roughness coefficients (Manning's "n") for the streams studied by detailed methods were assigned on the basis of field inspections and ground-level photographs. These photographs were compared to USGS calibrated photographs, taking into consideration channel conditions, overbank vegetation, and land use (Reference 15). For the Mohawk River, channel "n" values ranged from 0.025 to 0.033 and the overbank "n" values ranged from 0.045 to 0.070. The channel "n" values for Alplaus Kill

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ranged from 0.027 to 0.038, while the overbank "n" values ranged from 0.060 to 0.065. For Kromme Kill, a channel "n" value of 0.035 and an overbank "n" value of 0.065 were used. In selected locations along each of the detailed study streams, an overbank "n" value of 10.0 was used to eliminate conveyance in areas of ineffective flow.

For the streams studied by approximate methods, flood elevations were determined using USGS drainage area versus depth curves for New York State (Reference 16).

All elevations used in this study are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown on the maps.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study produces maps designed to assist communities in developing floodplain management measures.

4.1 Flood Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps (Reference 3).

For the streams studied by approximate methods, flood boundaries were delineated using topographic maps (Reference 3).

The 100- and 500-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

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4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the floodplain. The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were computed at cross sections. Between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary has been shown Portions of the floodway widths for the Mohawk River extend beyond the corporate limits. In addition, portions of the floodways for the Mohawk River are coincident with the channel banks.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "With Floodway" elevations presented in Table 2 for certain downstream cross sections of Alplaus Kill are lower than the regulatory flood elevations in that area, which must take into account the 100-year flooding due to backwater from other sources.

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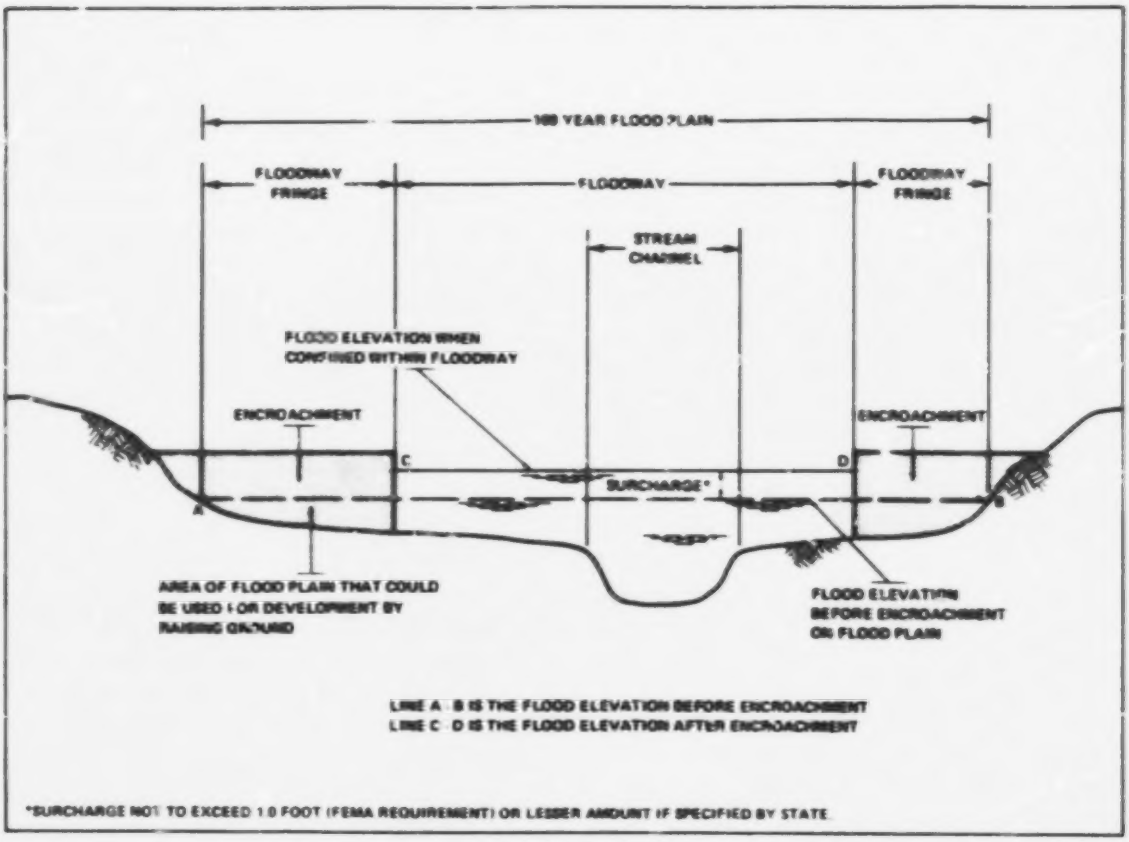
100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

FLOODWAY SCHEMATIC

Figure 2

5.0 INSURANCE APPLICATION

To establish actuarial insurance rates, data from the engineering study must be transformed into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail in the Town of Glenville.

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Mohawk River								
A	2,245	*	19,160	7.8	224.2	224.2	225.0	0.8
B	9,575	*	15,832	9.4	225.7	225.7	226.2	0.5
C	11,200	*	14,963	10.0	227.4	227.4	228.0	0.6
D	12,360	*	13,733	10.9	228.0	228.0	228.5	0.5
E	15,085	*	18,858	7.9	230.0	230.0	230.2	0.2
F	17,460	802[2]	24,681	6.1	231.2	231.2	231.7	0.5
G	19,075	*	26,782	5.6	231.5	231.5	232.0	0.5
H	21,005	*	46,204	3.2	232.0	232.0	232.6	0.6
I	23,010	2,850[2]	46,316	3.2	232.3	232.3	232.9	0.6
J	26,435	1,600[2]	32,441	4.6	232.5	232.5	233.1	0.6
K	27,465	1,073[2]	28,819	5.2	232.6	232.6	233.2	0.6
L	34,390	*	13,731	10.9	235.9	235.9	236.1	0.2
M	40,165	*	15,470	9.7	238.5	238.5	239.1	0.6
N	44,690	1,003[2]	19,003	7.9	240.4	240.4	241.2	0.8
O	48,555	520[2]	15,123	9.9	242.6	242.6	243.5	0.9
P	52,565	*	16,545	9.0	244.8	244.8	245.7	0.9
Q	55,620	*	15,721	9.5	246.0	246.0	246.8	0.8
R	58,520	*	17,183	8.7	250.8	250.8	251.7	0.9
S	63,010	*	13,529	11.1	252.7	252.7	253.4	0.7
T	66,210	*	16,884	8.9	254.9	254.9	255.7	0.8
U	70,760	*	20,156	7.4	256.9	256.9	257.8	0.9
V	72,895	*	25,331	5.9	257.7	257.7	258.6	0.9

[1]Feet above corporate limits

[2]This width extends beyond corporate limits

*Floodway coincident with channel banks

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY

(SCHENECTADY CO.)

FLOODWAY DATA

MOHAWK RIVER

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FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Alplaus Kill								
A	1,230	60	1,100	5.0	223.9	219.92	220.6	0.7
B	1,347	158	1,254	4.4	233.9	220.62	221.6	1.0
C	3,477	347	2,306	2.4	223.9	221.42	222.3	0.9
D	5,577	355	1,474	3.7	223.9	222.22	223.1	0.9
E	6,236	49	481	11.4	224.4	224.4	224.4	0.0
F	6,781	81	733	7.5	227.1	227.1	227.1	0.0
G	7,446	38	435	12.6	227.6	227.6	227.6	0.0
H	8,448	159	1,098	5.0	230.7	230.7	231.0	0.3
I	9,074	97	874	6.3	230.9	230.9	231.7	0.8
J	11,084	205	1,021	4.7	233.4	233.4	234.2	0.8
K	25,565	94	399	11.9	315.9	315.9	316.6	0.7
L	26,880	70	568	8.4	322.8	322.8	323.8	1.0
M	27,020	69	862	5.5	329.6	329.6	330.3	0.7
N	31,300	236	1,447	3.3	334.3	334.3	335.2	0.9
O	33,640	52	582	8.2	336.4	336.4	337.4	1.0
P	35,370	125	810	5.2	338.3	338.3	339.1	0.8
Kromme Kill								
A	2,160	59	546	2.3	228.1	228.1	228.3	0.2
B	2,965	39	273	4.6	228.2	228.2	228.5	0.3
C	3,225	111	530	2.4	229.2	229.2	230.2	1.0
D	5,035	220	357	3.5	232.0	232.0	232.7	0.7
E	6,425	173	602	2.1	235.8	235.8	236.6	0.8

[1]Feet above confluence with Mohawk River

[2]Elevation computed without consideration of backwater from Mohawk River

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

FLOODWAY DATA

ALPLAUS KILL - KROMME KILL

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5.1 Reach Determinations

Reaches are defined as sections of floodplain that have relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference may not have a variation greater than that indicated in the following tabulation for more than 20 percent of the reach:

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of the Town of Glenville are shown on the Flood Profiles (Exhibit 1) and summarized in Table 3.

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is used to establish relationships between depth and frequency of flooding in any reach. This relationship is then used with depth-damage relationships for various classes of structures to establish actuarial insurance rate tables.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations rounded to the nearest one-half foot, multiplied by 10, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, it is rounded to the nearest whole foot.

5.3 Flood Insurance Zones

Flood insurance zones and zone numbers are assigned based on the type of flood hazard and the FHF, respectively. A unique zone number is associated with each possible FHF, and varies from 1 for a FHF of 005 to a maximum of 30 for a FHF of 200 or greater.

Zone A: Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or FHFs determined.

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FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3] (NGVD)
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Mohawk River							
Reach 1	42	-5.4	-1.6	+2.7	055	A11	Varies
Reach 2	41,42	-6.1	-1.7	+2.9	060	A12	Varies
Reach 3	24,37,41	-8.0	-2.1	+4.8	080	A16	Varies
Reach 4	22,24	-6.5	-1.6	+3.5	065	A13	Varies
Reach 5	13,22	-7.8	-1.9	+3.6	080	A16	Varies
Reach 6	11,13	-6.9	-1.7	+3.5	070	A14	Varies
Alplaus Kill							
Reach 1	42	-3.0	-1.0	+1.7	030	A6	Varies
Reach 2	42	-3.4	-1.7	+1.3	035	A7	Varies
Reach 3	42	-1.5	-0.6	+0.9	015	A3	Varies
Reach 4	42	-1.0	-0.3	+0.6	010	A2	Varies
Reach 5	33	-1.2	-0.4	+0.7	010	A2	Varies
Reach 6	33	-2.1	-0.6	+1.2	020	A4	Varies
Reach 7	31,33	-1.7	-0.5	+1.1	015	A3	Varies
Kromme Kill							
Reach 1	41	-3.8	-1.6	+5.2	040	A8	Varies
Reach 2	41	-0.5	-0.2	+1.5	005	A1	Varies

[1]Flood Insurance Rate Map Panel
[2]Weighted Average
[3]Rounded to the nearest foot - see map

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

FLOOD INSURANCE ZONE DATA

MOHAWK RIVER - ALPLAUS KILL - KROMME KILL

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Zones A1, A2, A3, A4, A6, A7, A8, A11, A12, A13, A14 and A16:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHF.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, areas that are protected from the 100- or 500-year floods by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

Flood elevation differences, FHFs, flood insurance zones, and base flood elevations for the flooding sources studied in detail in the community are shown in Table 3.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Town of Glenville is, for insurance purposes, the principal result of the Flood Insurance Study. This map contains the official delineation of flood insurance zones and base flood elevations. Base flood elevation lines show the locations of the expected whole-foot water-surface elevation of the base (100-year) flood. The base flood elevations and zone numbers are used by insurance agents, in conjunction with structure elevations and characteristics, to assign actuarial insurance rates to structures and contents insured under the National Flood Insurance Program.

6.0 OTHER STUDIES

Flood Insurance Studies have been published for the Towns of Niskayuna, Ballston, Clifton Park, Charlton, and Rotterdam; the City of Schenectady; and the Village of Scotia (References 6, 17, 18, 19, 20, 21, and 22). Those studies are in exact agreement with this study.

7.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, Federal Emergency Management Agency, Regional Director, Region II Office, 26 Federal Plaza, Room 1351, New York, New York 10278.

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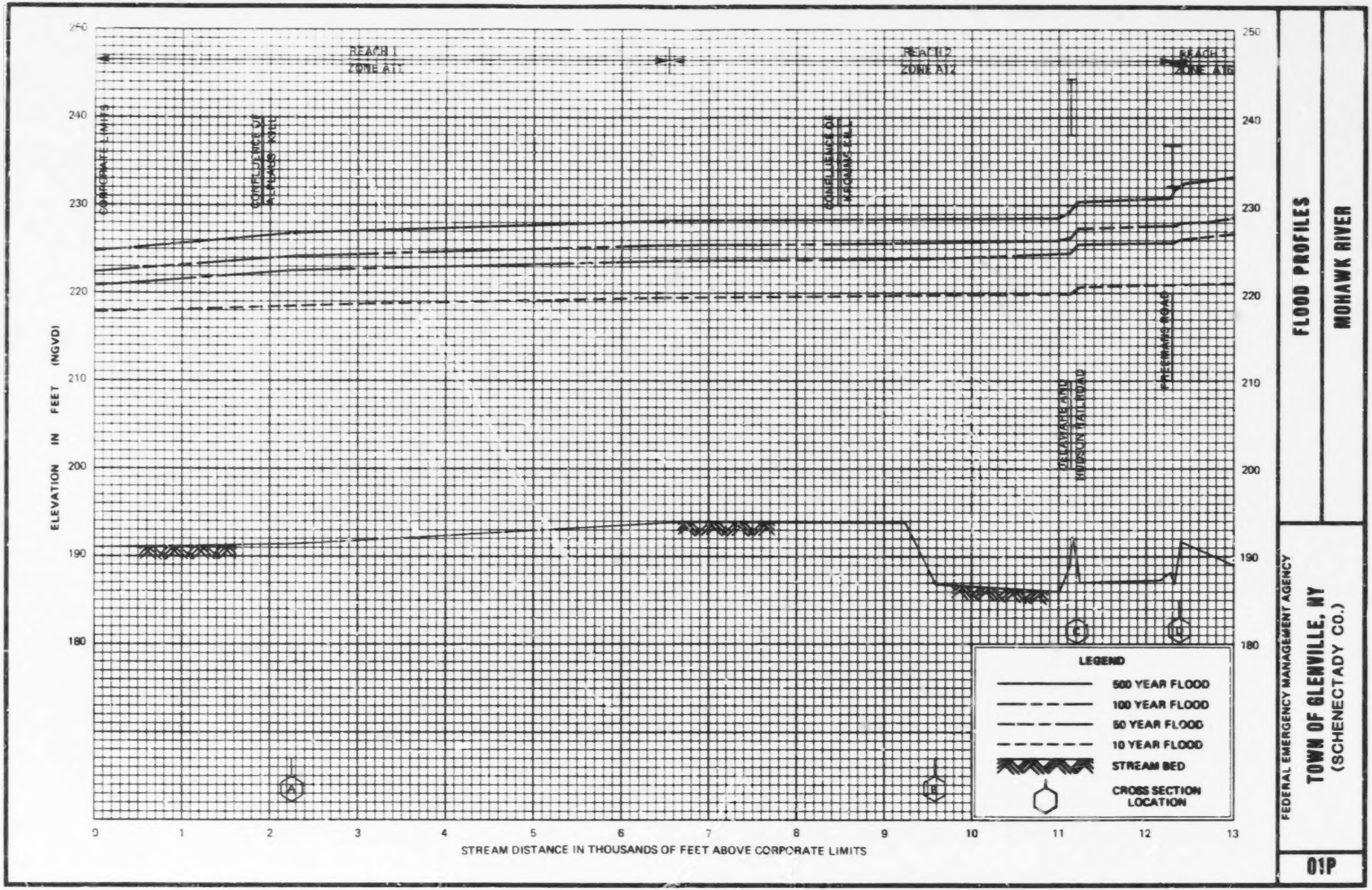

FLOOD PROFILES

MOHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

01P

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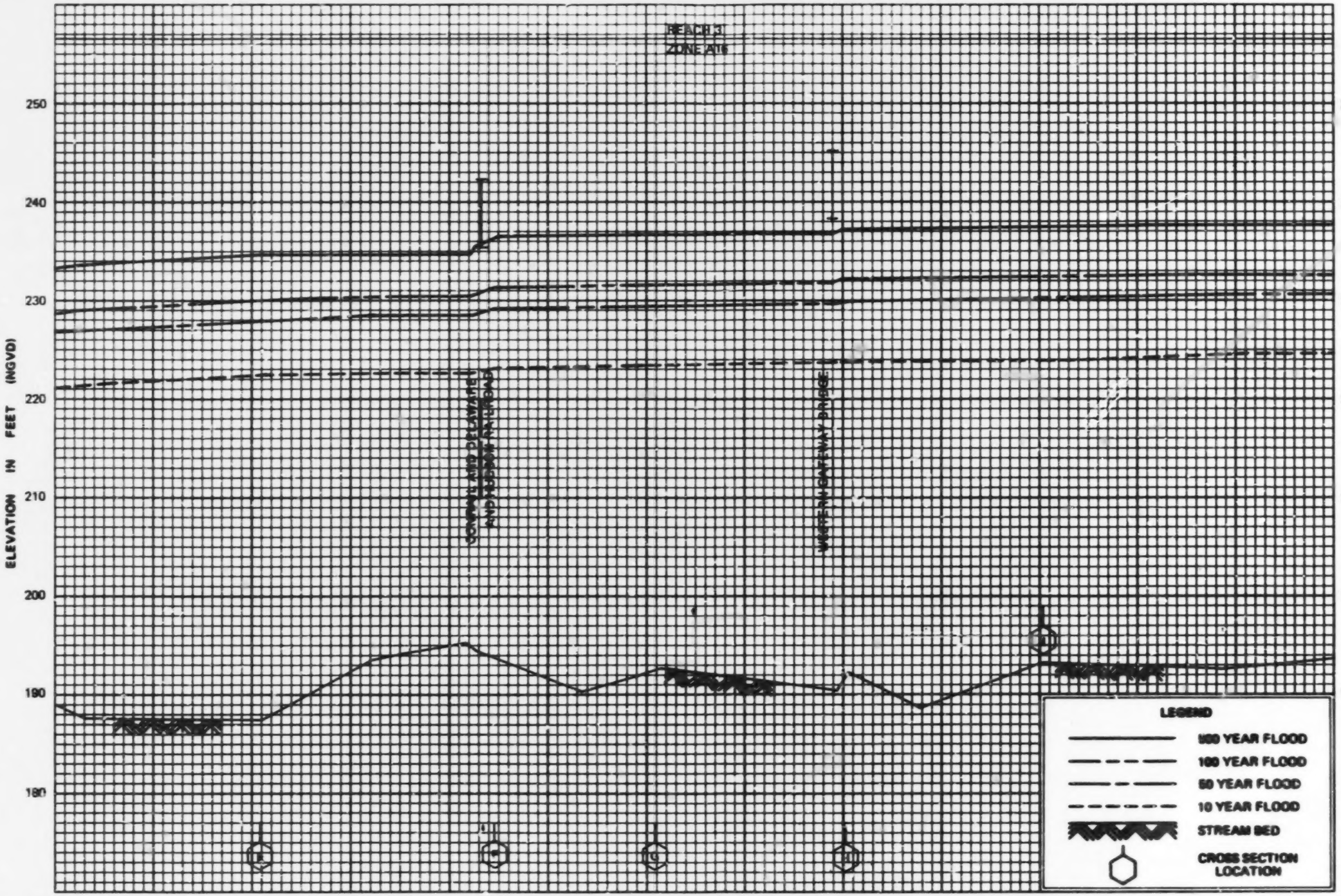
REACH 3
ZONE AE6



FLOOD PROFILES

MOHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

02P

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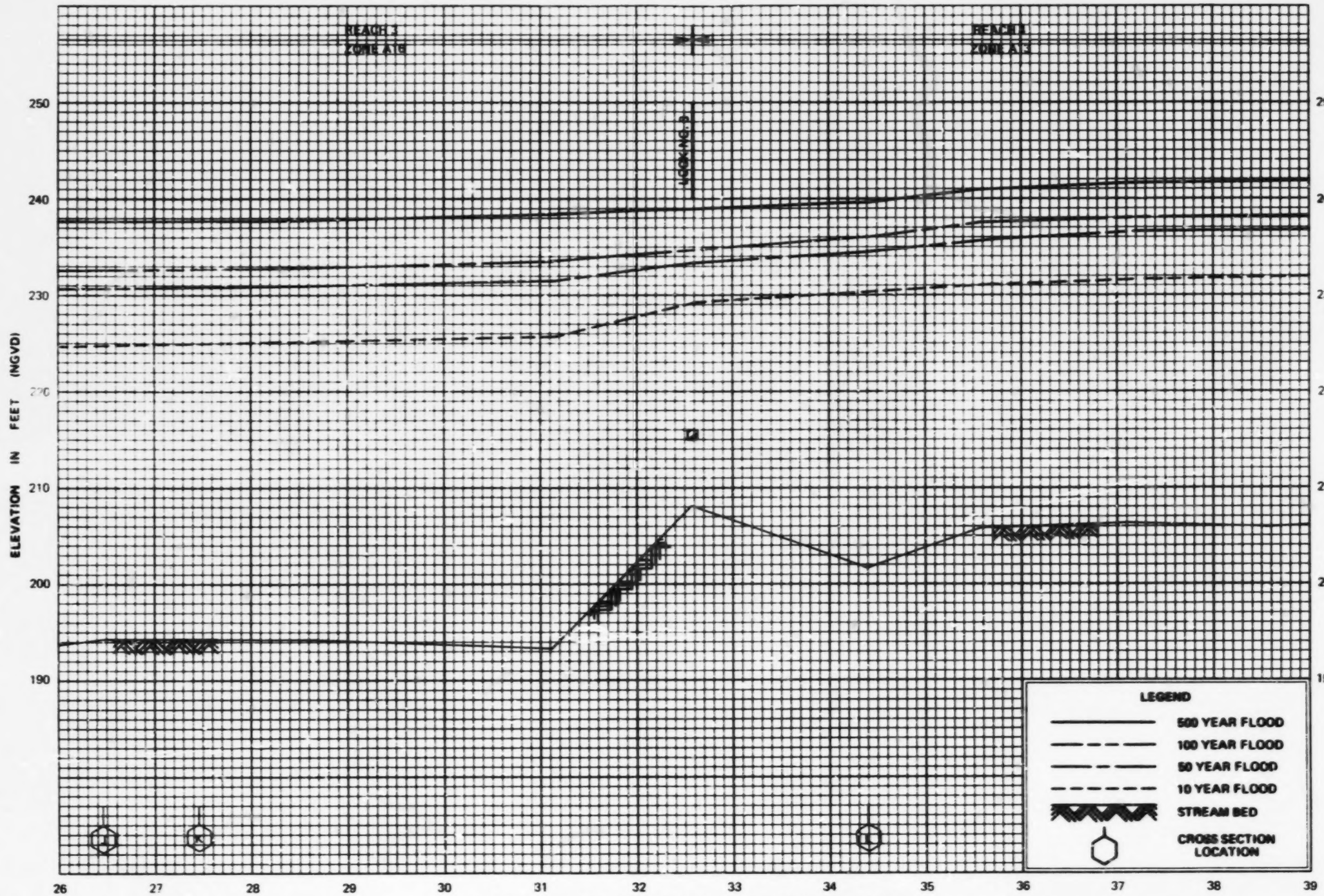

FLOOD PROFILES

MOHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

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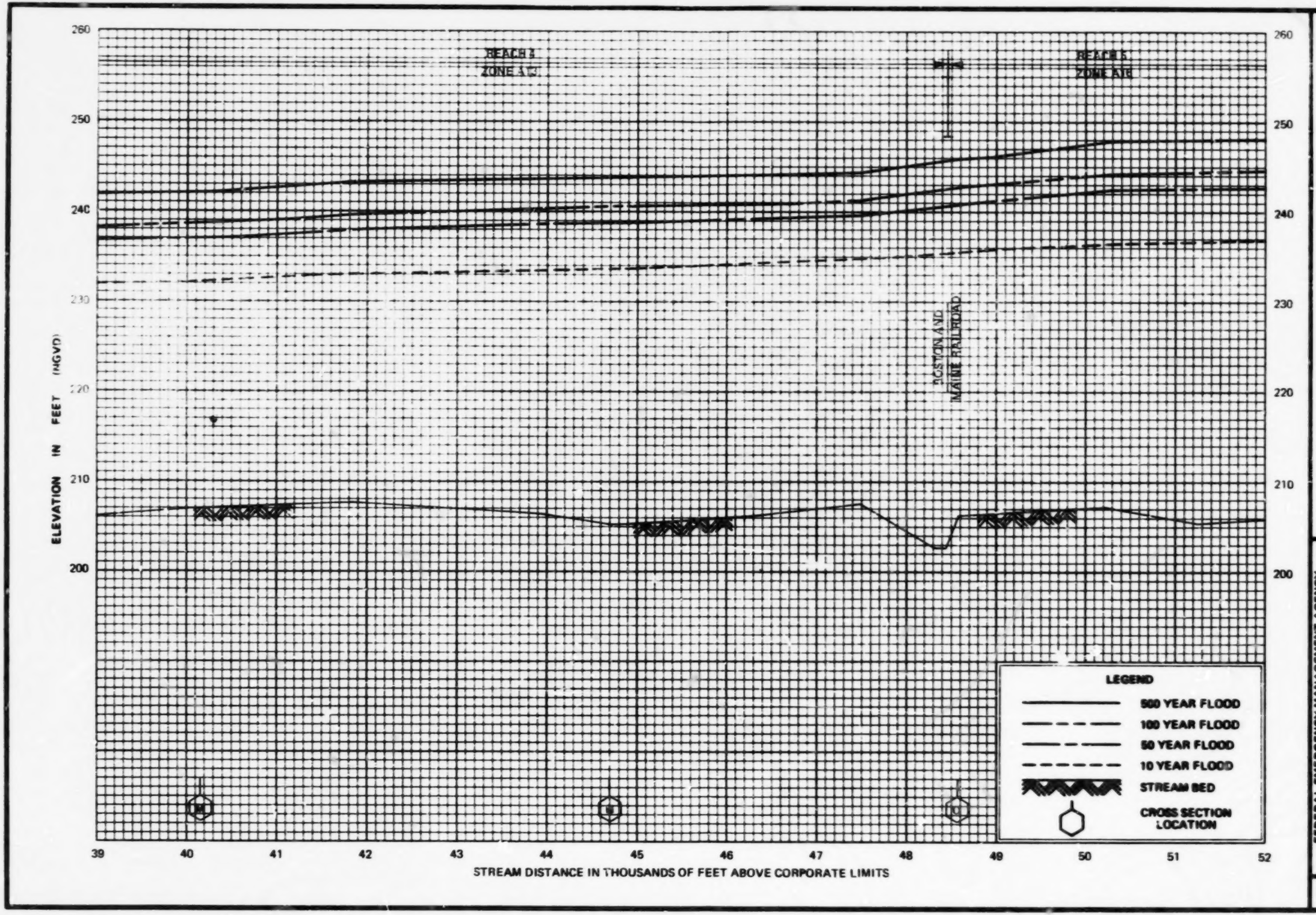

FLOOD PROFILES

MOHAWK RIVER

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TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

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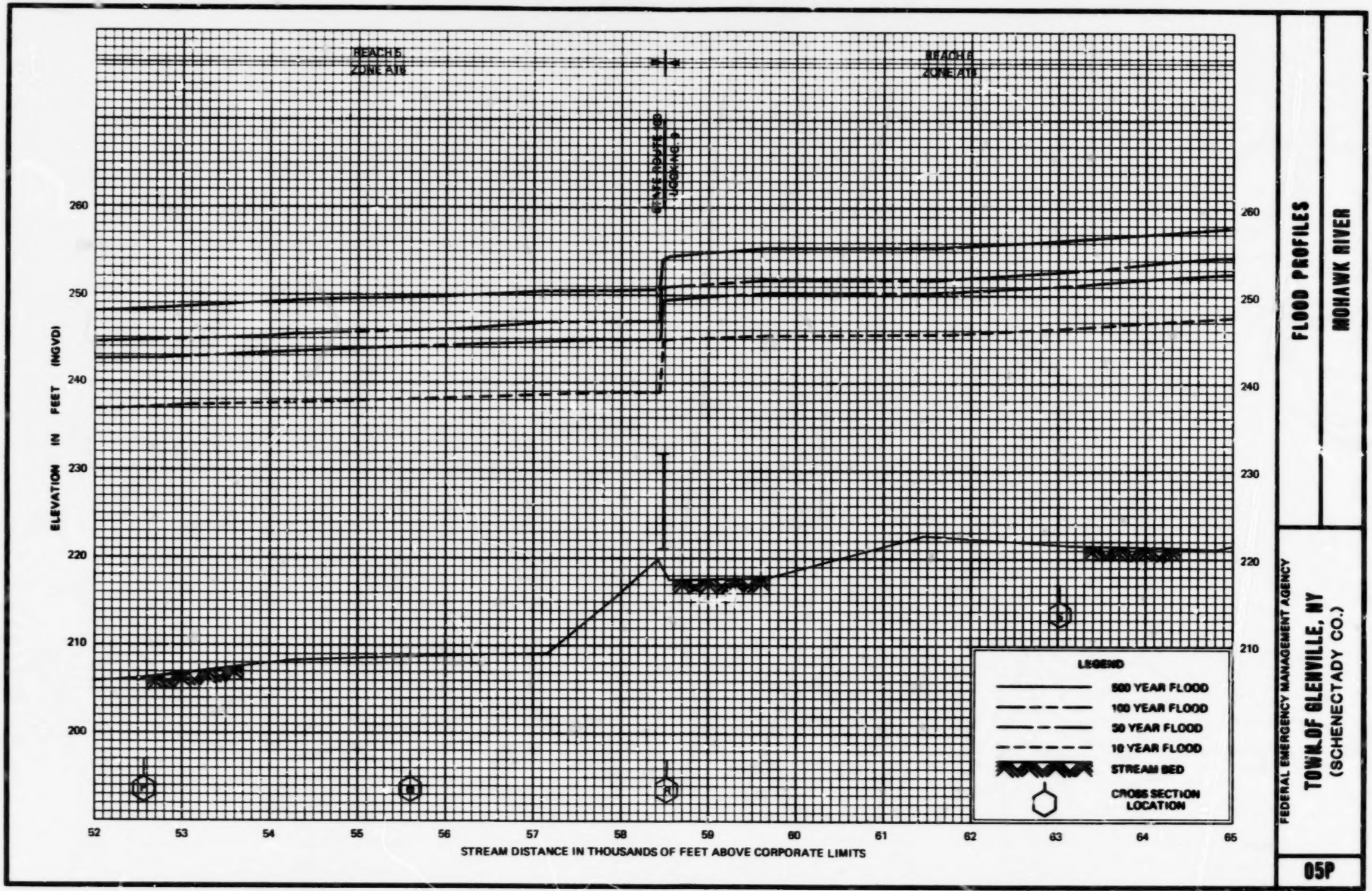

FLOOD PROFILES

MOHAWK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

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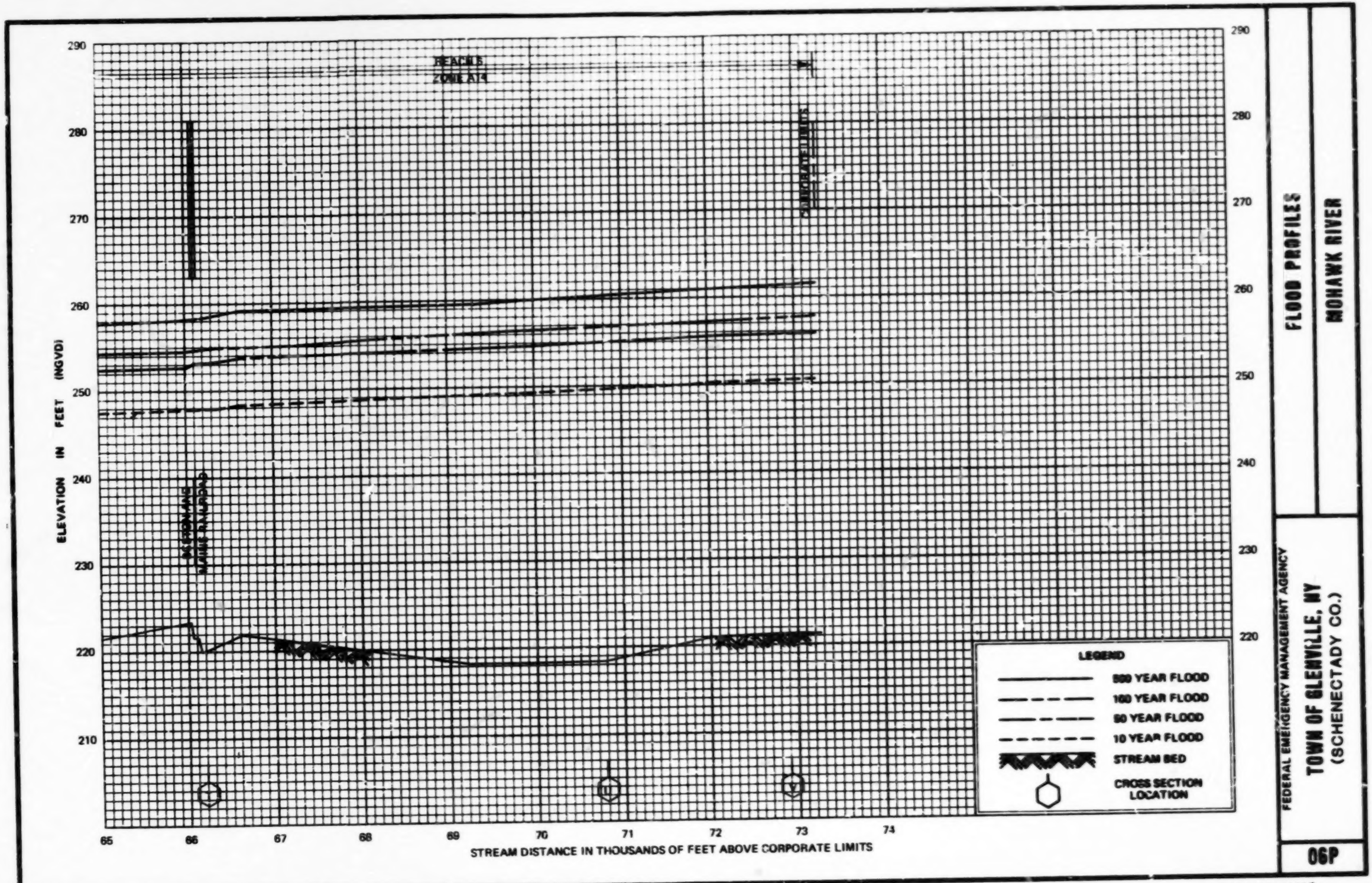

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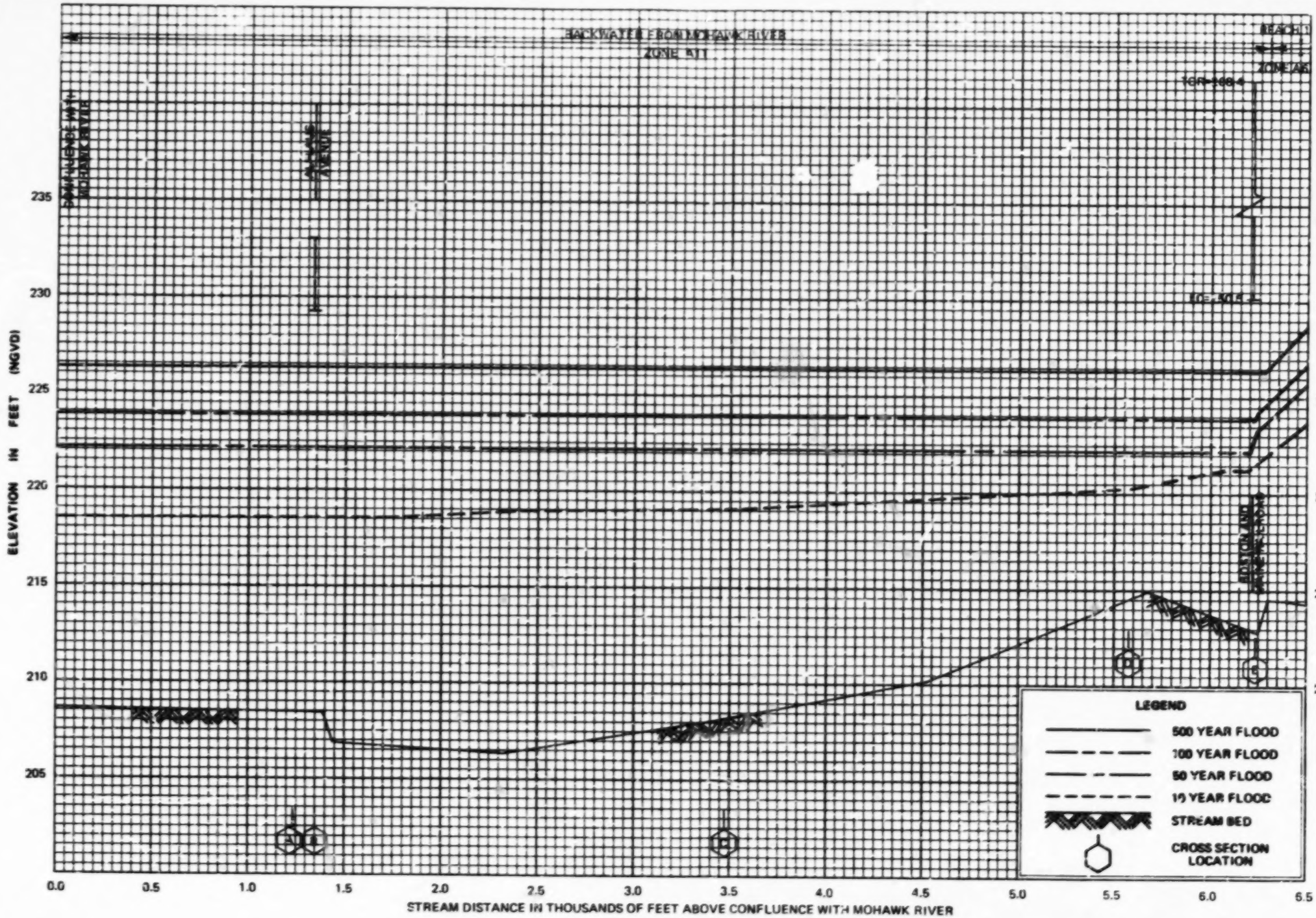

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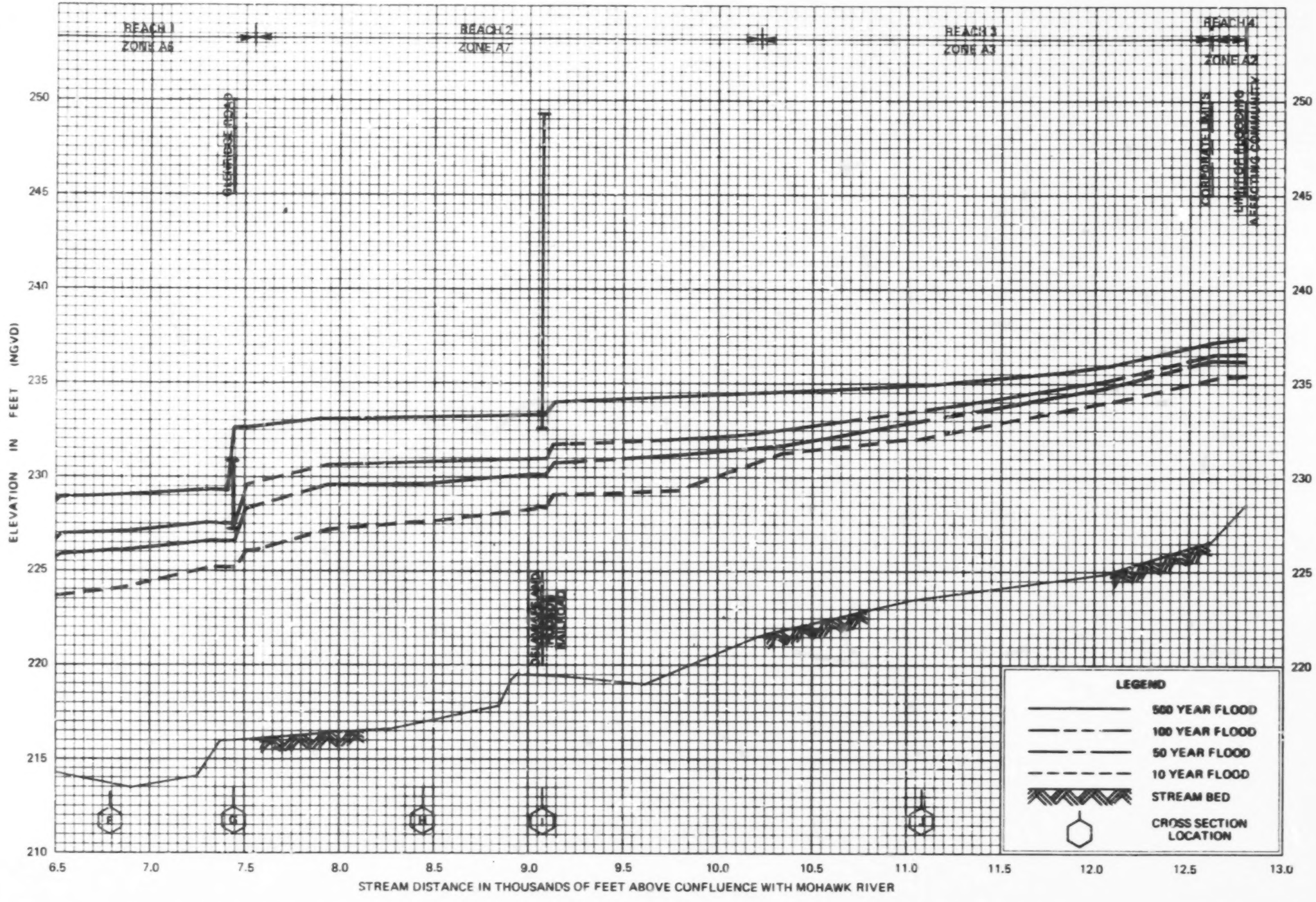

FLOOD PROFILES

ALPLAUS KILL

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

08P

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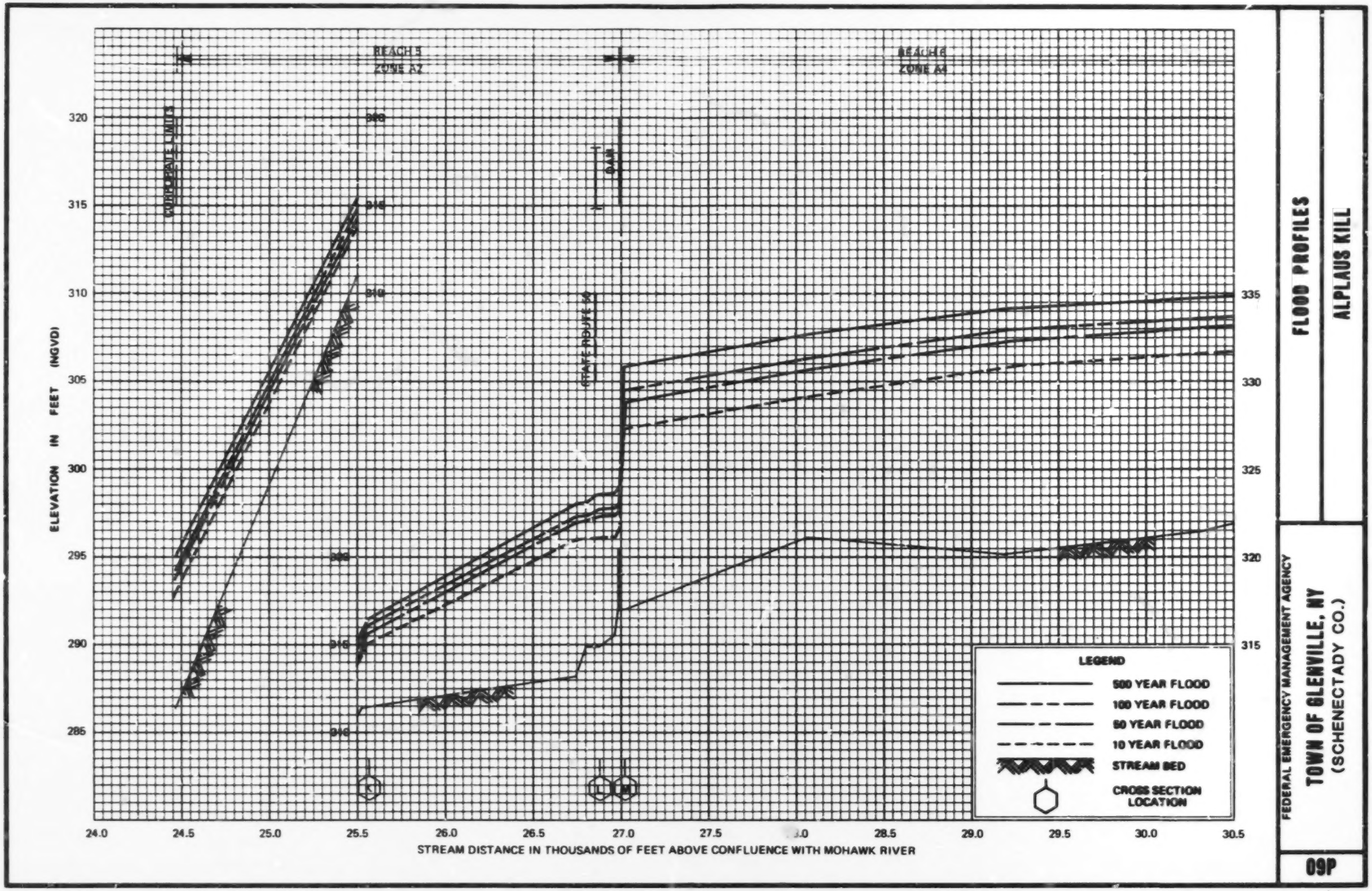

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REACH 6
ZONE AH

REACH 7
ZONE AH

MANVERE ROAD

CORRELATE - MH6

CORRELATE - MH5

CORRELATE - MH4

ELEVATION IN FEET (NGVD)

345
340
335
330
325
320

LEGEND
- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION

30.5 31.0 31.5 32.0 32.5 33.0 33.5 34.0 34.5 35.0 35.5 36.0 36.5 37.0

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH MOHAWK RIVER

FLOOD PROFILES

ALPLAUS KILL

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF GLENVILLE, NY
(SCHENECTADY CO.)

10P

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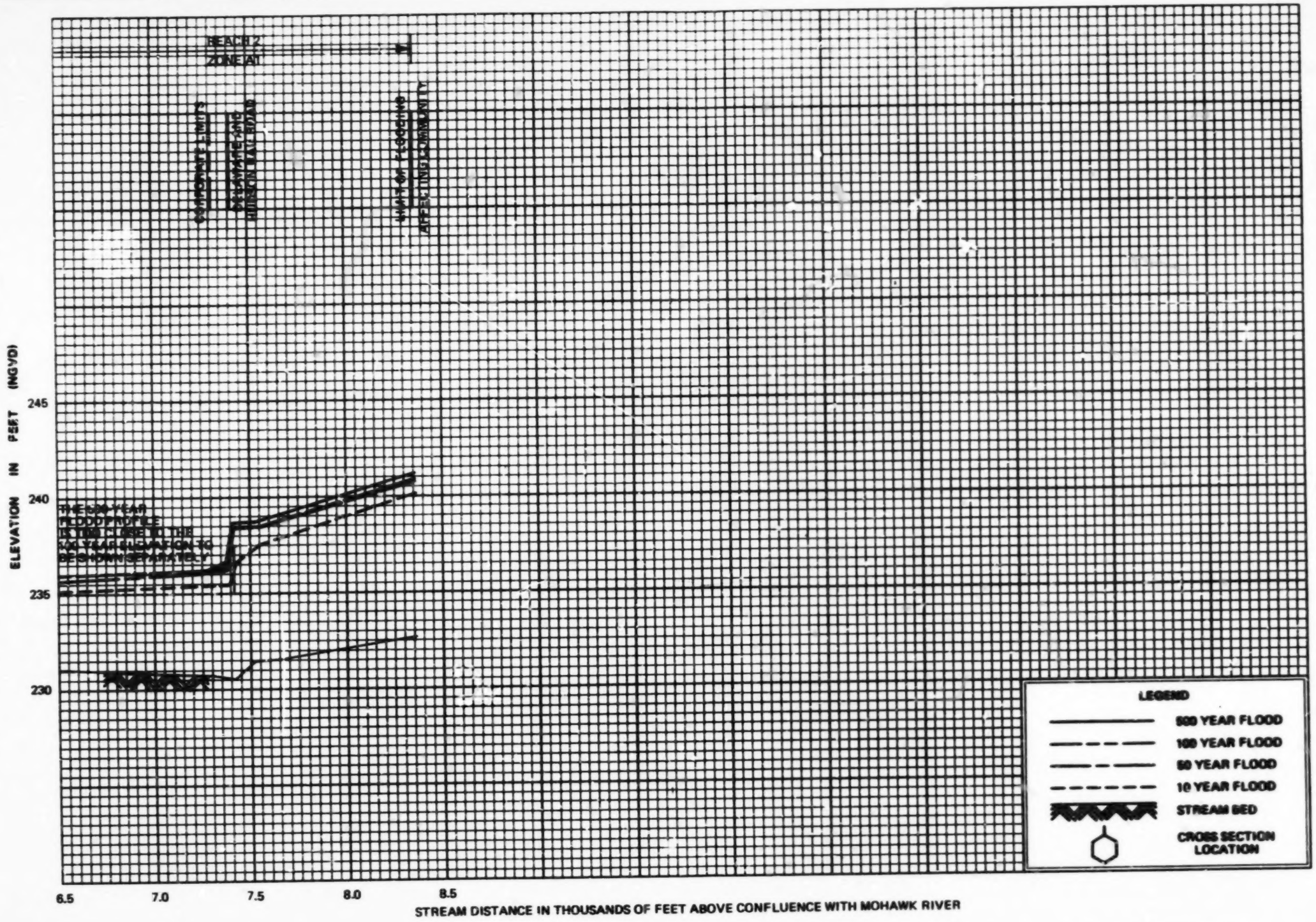

FLOOD PROFILES

KROMME KILL

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